* Each of the major scientists, their experiment, their contribution to molecular biology
* Structure of DNA and RNA
	+ Direction, components, differences and similarities between the two, reads/builds, 5’ and 3’ ends, antiparallel, H-bonding, nucleotide/nucleoside,
	+ Types of RNA – job of each, structure/shape of each, where they are in cell
	+ Chromatin, histones, nuceleosome, euchromatin, heterochromatin
* Differences and similarities in terms of genetic structure and protein formation of Prokaryotes and Eukaryotes
* Role mutations and play in each of the below processes
	+ Examples of each and Types of Mutations
	+ Causes of mutation
		- Mutagens/carcinogens
* Replication
	+ Current model as well as past models and how they differ
	+ The processes
	+ The purpose
	+ Leading strand, lagging strand/Okazaki fragments, Origins of Replication, replication fork
	+ Enzymes involved/job of each enzyme
		- Helicase, telomerase, primase, polymerase(more than one), ligase, topoisomerase, hydrolase, nuclease
	+ Recognize/complete complementary strands of DNA/RNA if given a strand
* Telomeres
* One-Gene-One-Polypeptide theory
* Transcription
	+ The process-3 steps
	+ Enzymes involved/job of each enzyme
		- Transcription factors, GTP, Poly A, exons, introns, snRNPs
	+ The purpose
* Translation
	+ The process
		- Initiation, elongation, termination
	+ Components involved/Job of each
		- rRNA, tRNA, mRNA
	+ The purpose
	+ Codon purpose/use, anticodon
	+ Ribosomal structure
		- P, A, E site
		- GTP, polyribosome
* Protein shapes and functions
* Viruses and Retrovirsus
	+ Structure
	+ Living or Nonliving?
	+ Lytic, Lysogenic
	+ Provirus, Temperate virus, phage, bacteriophage
	+ Genome replication in viruses
	+ HIV
* Bacteria
	+ Endomembranes, plasmids, F plasmid, R Plasmid, Toxins, Asexual and sexual reproduction, pillus
	+ Conjugation, transformation, transduction
	+ Transposons, episome
* Reverse Transcription
	+ The process
	+ Components involved/job of each
	+ The purpose
* Gene expression
	+ Promote, regulatory, operator, structural gene
	+ Lac operon and TRP Operon
		- Inducer, repressor
	+ Methylation, histone acetylation, siRNA,
* Key Vocabulary to know/be able to use:
	+ cistron, the versions of caps and tails on the genetic codes, noncoding regions, essential amino acids, host, vector, restriction enzyme, Splicesome
* Genetic Engineering
	+ Recombinant DNA, Vaccination, Cloning, PCR, Electrophoresis, GMO, pharmaceutical purposes, stem cells, DNA splicing
* Environmental factors that can influence genetic traits